

REMARKS

Reconsideration is respectfully requested. Claims 1-3 are present in the application. The claims are not amended herein.

Claims 1-3 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable. Claims 1 and 3 are rejected as being obvious over the combination of US 7088824 (Takeuchi) as combined with 6545791 (McCaughan et al). Claim 2 is rejected over this same combination, with the further addition of US5866911 (Baer).

Applicant respectfully traverses.

Takeuchi is presented in the office action as showing a single photon generator. The Examiner notes that Takeuchi does not provide the teaching of a quasi-phase-matching wave-guide being a wave-guide-type quasi-phase-matching LiNbO₃.

McCaughan et al is added to allegedly provide the teaching of a single photon generation device with a wave-guide-type quasi-phase-matching LiNbO₃.

Baer is added to provide teaching of a dichroic mirror in a single-photon generation device.

Applicant respectfully submits that the McCaughan et al and Baer documents are being incorrectly interpreted, by looking only for the term "single photon" and concluding that those two documents thereby relate to single photon generation devices, when in actuality, those terms in those documents do not have

any relation to single photon generation devices. The use of the term "single photon" in those documents has nothing to do with a single photon generator.

The Examiner states that McCaughan teaches a single photon generation device, by noting column 12, lines 1-2 of that document. The words "single photon" do appear in that document at that position, and it is respectfully submitted that a single photon detector is not disclosed by the document. The document is discussing machining trenches in lithium niobate film at the point where the Examiner notes the words "single photon", but is not discussing conversion of a single photon into 2 photons. It is discussing issues of single photons creating electron-hole pairs and recombination resulting in heating of the surface followed by melting and vaporization or sputtering, creating a trench in the LiNbO₃, having smooth surfaces.

The word "single photon" in McCaughan do not relate to the concepts of "one photon" that appear in the claims of this present application.

As for the Baer patent, the Examiner finds the words "single photon" in that document at column 13, lines 38-45 and also concludes that it relates to a single photon generation device. However, the words "single photon" appear in that document at column 13 lines 38-45 in discussing that the dye lucifer yellow can be two photon excited or single photon excited:

The widely used dye, lucifer yellow, has the advantage of a very large Stokes shift, and can be two-photon excited by the output of a Ti-sapphire laser at 850 nm or single photon excited by the frequency doubled 850 nm output (i.e., 425 nm), and the quenching beam can be the frequency doubled 1080 nm output of the Ti-sapphire laser (i.e., at 540 nm).

The Baer patent is not concerned with a single photon generator, as reading of the above should make clear.

The appearance of the words "single photon" in the McCaughen and Baer documents do not provide the support to teach what the office action is asserting they do. The documents do not relate to single photon generation devices and therefore, the combination of those documents with Takeuchi would not be warranted and would not produce the applicant's claims.

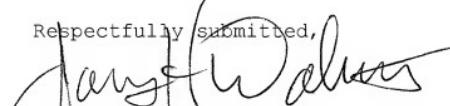
It is therefore respectfully submitted that claims 1-3 are patentable and the combination of McCaughen, Baer and Takeuchi does not teach or suggest the claims, nor would the documents teach or suggest the claims when considered alone.

In light of the above noted amendments and remarks, this application is believed in condition for allowance and notice thereof is respectfully solicited. The Examiner is asked to contact applicant's attorney at 503-224-0115 if there are any questions.

It is believed that no further fees are due with this filing or that the required fees are being submitted herewith. However,
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if additional fees are required to keep the application pending,
please charge deposit account 503036. If fee refund is owed,
please refund to deposit account 503036.

Respectfully submitted,


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